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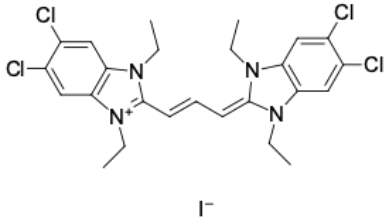
LumiTracker® Mito JC-1

http://www.lumiprobe.com/p/jc-1-mitochondrial-membrane-potential-probe

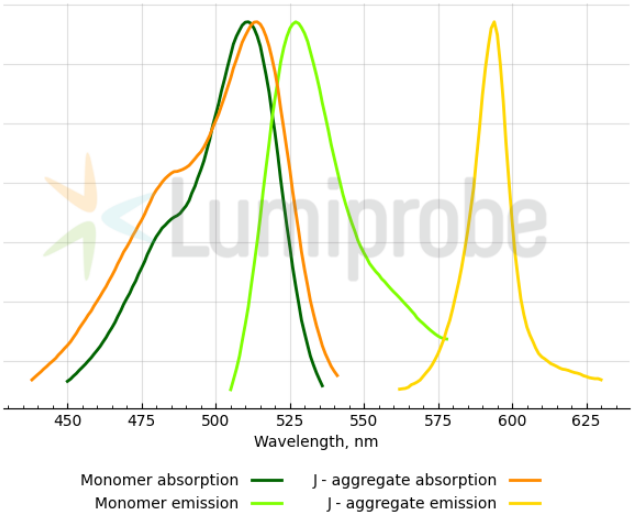
JC-1 is a cationic carbocyanine dye that accumulates in the mitochondria of live cells in a potential-dependent manner.

The dye exists as a green-fluorescent monomer at depolarized membranes and low concentrations. At higher concentrations (aqueous solutions above 0.1 µM) and hyperpolarized membranes, the dye forms J-aggregates that exhibit an emission at the orange channel.

Healthy cells have high mitochondrial membrane potential, and the decrease of mitochondrial membrane potential is a marker of the early stage of apoptosis. All this allows the use of changes in the orange/green fluorescence ratio of JC-1 to determine healthy vs. depolarized mitochondria. The orange/green fluorescence ratio of JC-1 depends only on the mitochondrial membrane potential and not on other factors such as the size, shape, and density of mitochondria.



Structure of JC-1



Absorption and emission spectra of JC-1

General properties

Appearance:	red-purple solid
Molecular weight:	652.24
CAS number:	47729-63-5; 3520-43-2
Molecular formula:	$C_{25}H_{27}Cl_4IN_4$
IUPAC name:	1H-Benzimidazolium, 5,6-dichloro-2-[3-(5,6-dichloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)-1-propen-1-yl]-1,3-diethyl-, iodide
Solubility:	good in DMSO
Quality control:	NMR ^1H and HPLC-MS (95+%)
Storage conditions:	24 months after receival at -20°C in the dark. Transportation: at room temperature for up to 3 weeks. Desiccate.
Legal statement:	This Product is offered and sold for research purposes only. It has not been tested for safety and efficacy in food, drug, medical device, cosmetic, commercial or any other use. Supply does not express or imply authorization to use for any other purpose, including, without limitation, in vitro diagnostic purposes, in the manufacture of food or pharmaceutical products, in medical devices or in cosmetic products.